B3 cncl'd.

21. (New) An electromechanical machine as set forth in claim 16, wherein said conductive layer is in electrical communication with said magnetically permeable core and is grounded thereby.

22. (New) An electromechanical machine as set forth in claim 16, wherein said cured resin substantially entirely impregnates said conductive windings of said stator.

REMARKS

In response to the Final Office Action mailed on February 28, 2002, claims 1 and 9 have been amended, claims 6 and 12 have been canceled without prejudice, and new claims 16-22 have been added. Reconsideration and allowance of all pending claims are requested.

In the Office Action, claims 1, 2, 7-9, 11, 13 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cope et al. and Erdman et al. Claims 3-5 and 10 were rejected under the same code section as being unpatentable over Cope et al. and Erdman et al. and further in view of Erdman et al., U.S. Patent No. 5,661,353 ('353). Claims 6 and 12 were rejected under the same code section as unpatentable over Emery and Erdman et al. (both Erdman et al. references) in view of Andrus. Finally, claim 15 was rejected under the same code section as unpatentable over Cope et al. and Erdman et al.

The previously pending independent claims included claims 1 and 9. The only basis for rejection of these claims was the combination of Cope et al. with Erdman et al. By the present response, the subject matter of original claim 6 has been incorporated into claim 1 by amendment, and the subject matter of original claim 12 has similarly been added to claim 9. The basis for rejection of claims 6 and 12 was the combination of Emery and Erdman et al. in view of Andrus. Applicant first points out that the rejection

of claims 6 and 12, as understood, appears to be somewhat improper in that the Cope et al. reference is not included in the cited combination. That is, if claims 1 and 9 require the teachings of Cope et al., as argued by the Examiner, it is believed that the Examiner intended either that the Cope et al. reference be included in the rejection of claims 6 and 12, or that the Emery reference provides similar teachings. At any rate, the pending claims are believed to be clearly patentable over the cited references for the reasons summarized below.

The Examiner appears to have applied the Cope et al. reference merely for the teaching of an electric motor. No mention whatsoever is contained in the reference for an electrostatic shield, and particularly an electrostatic shield comprising resin and conductive paint, as acknowledged by the Examiner. The Erdman et al. reference was cited for treating a stator with varnish and then painting with a copper paint. Erdman et al., in an example referred to as "ESIM-3" discuss coating a stator stack and end windings with copper conductive paint. However, the reference does not teach or suggest a protective top coat applied to the conductive layer on an inner surface of the stator, as now recited in independent claim 1. This feature, originally recited in claim 6, was rejected by the Examiner over Emery, Erdman et al., the Erdman et al. ('535) patent, and Andrus.

Applicant first notes that the Emery reference does not related to an electromechnical machine configured with a stator and rotor as recited in pending claims. The only teaching that can possibly be gleaned this reference relates to an outer conductive paint layer on the coil assembly described. The paint layer is not, however, disposed on an inner surface of a stator. As noted above, the Erdman et al. reference does mention a motor with an inner surface of a stator painted with a conductive paint. However, neither the Erdman et al. reference nor Erdman et al. '353 teaches the use of an insulative protective top coat applied over the conductive layer of an electrostatic shield. The Examiner relied upon the Andrus reference for such teaching.

The Andrus reference relates to a submersible electric motor that has an outer tube 6 and an inner tube 8 bonded to molded rubber 12 to envelop winding coils 5. However, the reference contains no teaching whatsoever for the use of even the desirability of an electrostatic shield in the motor. Moreover, the Andrus reference clearly does not require or even indicate that there should be any insulating properties of the inner tube 8 at all. Rather, as clearly stated in column 3, lines 26-32, the inner tube 8 may be made of a sheet of plastic *or non-magnetic metal bonded or even welded to form a tube.* Thus, the inner tube 8 of Andrus can in no way be suggestive of the insulative, protective top coat recited in claim 1 which is made of an insulating material and is disposed over the electrostatic shield.

Moreover, it has been learned that the provision of an electrostatic shield of the type tested by Erdman et al. is generally unacceptable unless a top coat of the type recited in the claims is provided. That is, it has been found that the conductive paint may find its way into interstices within the coils and may thus cause short circuits. The protective top coat recited in claim 1 helps to alleviate such problems. Erdman et al. themselves do not teach or even suggest the necessity of providing any such protective top coat. The combination suggested by the Examiner is, then, simply unsupported by the primary references or by the secondary Andrus reference.

To support a proper rejection under §103, the Examiner must show some suggestion or motivation in the art for the proposed combination. In formulating the rejection of claims 6 and 12, the Examiner suggested that "[i]t would have been obvious to a person skilled in the art at the time of the invention to construct the machine of Cope and Erdman (IEEE and '353) with a protective layer on an inner surface of the stator to allow the machine to operate in oil or water, as taught by Andrus." However, nothing in any of the cited primary references even suggests that these motors would be appropriate for use in oil or water in a submerged fashion, as is the Andrus stator. Similarly, nothing in the Andrus reference even remotely suggests that an electrostatic shield could or

should be provided in the motor. Rather, the Andrus motor is of an entirely different design in which both the outer surface, the inner surface, and end regions of the stator must be completely sealed by the tubes and additional sealing materials. Thus, the motivation or suggestion proposed by the Examiner is and only can be based upon the teachings of the present application, which are unavailable to the Examiner for providing the necessary link between the references.

Claim 1, and the claims depending therefrom, are thus believed to be clearly allowable over the cited references for the reasons summarized above. Similarly, claim 9 has been amended to include a similar recitation originally present in claim 12. Claim 9, and the claims depending therefrom are thus also believed to be clearly allowable for similar reasons.

By this response, new claims 16 through 22 have been added. New claim 16 recites an electromechanical machine that includes a stator, a rotor, an electrostatic shield, and an insulative layer disposed over the electrostatic shield between the conductive windings of the stator and the rotor. As noted above, no such insulative layer or protective coating is suggested by the prior art, in combination with an electrostatic shield on an inner surface of a machine stator. Thus, claims 16-22 are believed to be clearly allowable over the cited art, and their consideration and allowance are requested.

In view of the remarks and amendments set forth above, Applicant respectfully requests allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the drawings and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend the claims as follows:

1. (Twice Amended) An electromechanical machine comprising:

a fixed stator having conductive windings located in a plurality of parallel, axially-extending winding slots defined about an inner surface of a magnetically permeable core, said stator further comprising first and second coilheads located at opposite axial ends of said magnetically permeable core;

each of said winding slots including an insulative top liner located radially inward of said conductive windings located therein;

a movable rotor located radially inward of said stator;

an electrostatic shield arrangement being formed by an insulative layer of resin material covered by a conductive layer located radially inward thereof; ~~and~~

said insulative layer and said conductive layer being conformally applied to said stator so as to be located in said winding slots radially inward of said respective top liner and an inside surface of said first and second coilheads to interpose said conductive windings and said rotor~~.~~; and

an insulating, protective top coat applied over said conductive layer on an inner surface of said stator.

9. (Twice Amended) An electromechanical machine comprising:

a fixed stator having conductive windings located in a plurality of parallel, axially extending winding slots defined in a magnetically permeable core;

a movable rotor operative to have a magnetic flux induced therein by excitation of said conductive windings of said stator;

an insulative layer having a conformal structure characteristic of a resin that had been applied to said stator in an uncured state after said conductive windings were placed in said winding slots and subsequently cured to yield a predetermined layer thickness between said conductive windings and said rotor; and

a conductive layer of metallic paint bonded to said insulative layer and thereby separated from said conductive windings, said insulative layer and said conductive layer thereby forming an electrostatic shield arrangement interposing said conductive windings and said rotor~~.~~; and

an insulating, protective top coat applied over said conductive layer on an inner surface of said stator.